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Graphical Abstracts/J. Fluorine Chem. 129 (2008) 319–324

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Second sphere interaction in fluoroanion binding: Synthesis, spectroscopic and X-ray structural study of *trans*-dichlorobis(ethylenediamine) cobalt(III) terafluoroborate

Rajni Sharma[a], Raj Pal Sharma[a], B.M. Kariuki[b]

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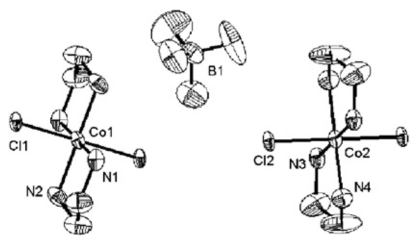

Cationic metal complexes as second sphere ligands: synthesis, spectroscopic and X-ray structural study of *trans*-dichlorobis (ethylenediamine)cobalt(III) terafluoroborate.
The newly synthesized complex salt [*trans*-Co(en)$_2$Cl$_2$]BF$_4$ is composed of complex cation [*trans*-Co(en)$_2$Cl$_2$]$^+$ and BF$_4^-$ in the solid state. A strong network of intermolecular N–H···F interactions between the cation and anion as well as intramolecular N–H···Cl interactions within the cations stabilize the crystal lattice.

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Green synthesis of methyl trifluoropyruvate catalyzed by solid acids

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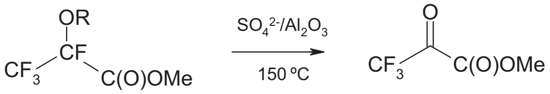
Sulfated alumina and titania are solid acids which effectively catalyze a decomposition of a methyl ester of 2-methoxytetrafluoropropionic acid to methyltrifluoropyruvate.



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Regio- and stereo-specific preparation of (*E*)-1-aryl-3,3,3-trifluoro-1-iodo-propenes and their palladium-catalyzed reaction with terminal alkynes

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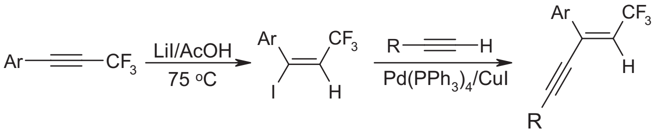
[b]*College of Chemistry and Materials Engineering, Wenzhou University, Xueyuan Road, Wenzhou, Zhejiang 325027, China*



doi:10.1016/S0022-1139(08)00096-1

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Synthesis of stable arsonium and sulfur ylides from perfluoroalkanesulfonyl diazocarbonyl compounds and their X-ray diffraction analysis

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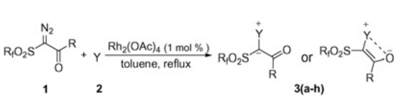
[b]*Key Laboratory of Organofluorine Chemistry, Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, 354 Fenglin Lu, Shanghai 200032, China*



A series of stable fluorine-containing arsonium ylides and sulfur ylides were simply synthesized from perfluoroalkanesulfonyl diazocarbonyl compounds in the presence of rhodium catalyst. The ylide products are fairly stable due to the strong electron-withdrawing properties of perfluoroalkanesulfonyl group and carbonyl group. They are fully confirmed by spectral methods and the structures of **3ba** and **3cd** are also established by X-ray single crystal diffraction analysis. Several interesting features about the ylide structures and some weak fluorine interaction between them are described here.

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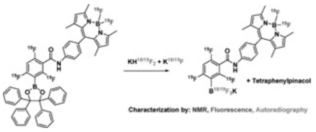
Capturing aqueous [^{18}F]-fluoride with an arylboronic ester for PET: Synthesis and aqueous stability of a fluorescent [^{18}F]-labeled aryltrifluoroborate

Richard Ting[a], Justin Lo[a], Michael J. Adam[a,b], Thomas J. Ruth[b], David M. Perrin[a]

[a]*Chemistry Department, 2036 Main Mall, University of British Columbia, Vancouver, BC V6T-1Z1, Canada*
[b]*PET Chemistry Group, TRIUMF, 4004 Wesbrook Mall, Vancouver, BC V6T-2A3, Canada*



The aqueous stability of aryltrifluoroborates is of importance to their use in transition metal mediated coupling reactions as well as their potential use in [^{18}F]-labeled aryltrifluoroborate PET imaging agents. Nevertheless, few studies have fully characterized the solvolysis of fluoride from an aryltrifluoroborate in water. Using [^{19}F] NMR, fluorescence and [^{18}F]-labeling techniques, we disclose the composition of an aryltrifluoroborate of exceptional kinetic stability with respect to solvolytic defluoridation. This work not only highlights the potential of using [^{18}F]-labeled aryltrifluoroborates for PET tracers, but provides a chemical platform and a general approach for evaluating the stability of other aryltrifluoroborates.

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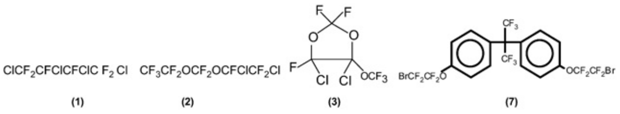
A general method for nearly reduction-free dehalogenations in a fluorinated biphasic system

I. Wlassics, V. Tortelli

Solvay Solexis, Viale Lombardia 20, 20021 Bollate (MI), Italy

A modified version of the fluorinated biphase system in the Zn-mediated dehalogenations of compounds **1**–**3** and **7**, in the presence of a fluorinated solvent and a hydrogenated co-solvent affords as much as a 7-fold decrease in hydrogenated by-products with high yields with respect to the classical homogeneous Zn-based dehalogenation that employs solely a hydrogenated solvent.

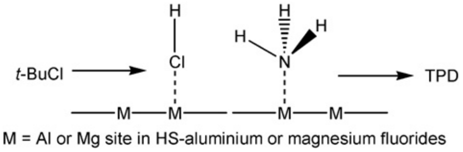


J. Fluorine Chem., 129 (2008) 366

A comparative study of surface acidity in the amorphous, high surface area solids, aluminium fluoride, magnesium fluoride and magnesium fluoride containing iron(III) or aluminium(III) fluorides

Mahmood Nickkho-Amiry[a], Gehan Eltanany[b], Stefan Wuttke[b], Stephan Rüdiger[b], Erhard Kemnitz[b], John M. Winfield[a]

[a]*Department of Chemistry, University of Glasgow, Joseph Black Building, Glasgow G12 8QQ, UK*
[b]*Institut für Chemie, Humboldt-Universität zu Berlin, Brook-Taylor-Straβe 2, 12489 Berlin, Germany*



Dehydrochlorination of Bu^{t}Cl, studied by FTIR and [^{36}Cl]-labelling, NH_3 TPD and catalytic dismutation of $CHClF_2$ are used to compare Lewis acidity at HS-AlF_3 and HS-MgF_2 surfaces.

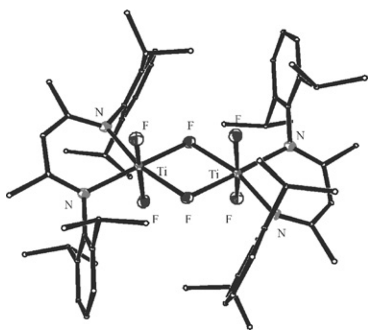
J. Fluorine Chem., 129 (2008) 376

Preparation of the hydrocarbon-soluble trifluoro complex $LTiF_3$ with a β-diketiminato ligand

Grigory B. Nikiforov[a], Herbert W. Roesky[a], Peter G. Jones[b]

[a]*Institut für Anorganische Chemie, Universität Göttingen, Tammannstrasse 4, D-37077 Göttingen, Germany*
[b]*Institut für Anorganische Chemie und Analytische Chemie der Technischen Universität Braunschweig, Hagenring 30, D-38106 Braunschweig, Germany*

The β-diketiminato fluoride complex $(LTiF_3)_2$ obtained directly from TiF_4 is soluble in non-polar solvents and moderately active in polymerization reactions of ethylene.

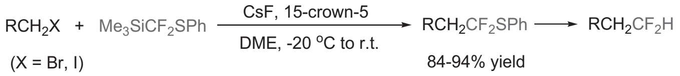


J. Fluorine Chem., 129 (2008) 382

Fluoride ion-mediated nucleophilic fluoroalkylation of alkyl halides with Me_3SiCF_2SPh: Synthesis of $PhSCF_2$- and CF_2H-containing compounds

Ya Li, Jinbo Hu

Key Laboratory of Organofluorine Chemistry, Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, 354 Fenglin Road, Shanghai 200032, China


$$\underset{(X = Br, I)}{RCH_2X} + Me_3SiCF_2SPh \xrightarrow[\text{DME, -20 °C to r.t.}]{\text{CsF, 15-crown-5}} \underset{\text{84-94\% yield}}{RCH_2CF_2SPh} \longrightarrow RCH_2CF_2H$$

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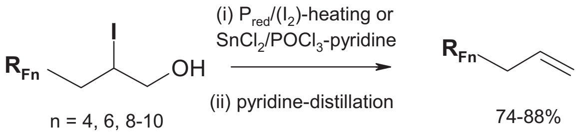
Syntheses of fluorous propenes from 3-perfluoroalkyl-2-iodo-1-propanols

Csongor Szíjjártó, Peter Ivanko, Ferenc T. Takács, Dénes Szabó, József Rábai

Institute of Chemistry, Eötvös Loránd University, P. O. Box 32, H-1518, Budapest 112, Hungary

Fluorous propenes can be obtained in excellent yields and 100-g quantities by the reaction of easily accessible 2-iodo-3-(perfluoroalkyl)-1-propanols with red phosphorus and catalytic amounts of iodine or with an $SnCl_2/POCl_3$ reagent pair in pyridine.



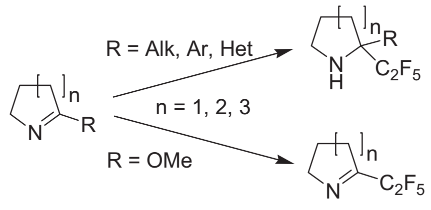
J. Fluorine Chem., 129 (2008) 390

New method of preparation of C_2F_5Li and its reactions with cyclic imines and lactims: Synthesis of α-pentafluoroethyl proline

Nikolay E. Shevchenko[a], Valentine G. Nenajdenko[a], Gerd-Volker Röschenthaler[b]

[a]*Department of Chemistry, Moscow State University, Moscow 119899, Russia*
[b]*Institute for Inorganic and Physical Chemistry, The University of Bremen, Leobener Str., D-28334, Germany*

Addition of pentafluoroethyllithium to cyclic imines leads to pentafluoroethyl substituted pyrrolidines, piperidines and azepanes, while the reaction of imidates gives rise to new 2-pentafluoroethyl five- and six-membered cyclic imines.



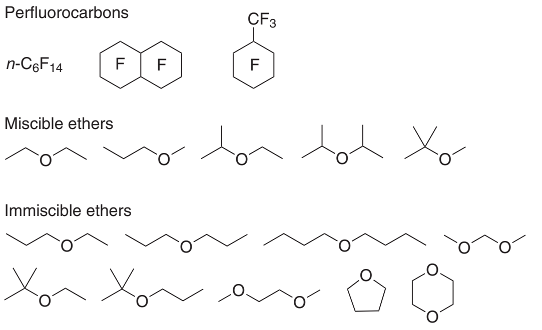
J. Fluorine Chem., 129 (2008) 397

On the miscibility of ethers and perfluorocarbons. An experimental and theoretical study

Peter Babiak, Adriana Němcová, Lubomír Rulíšek, Petr Beier

Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic and Gilead Sciences Research Center, Flemingovo nám. 2, 166 10 Prague, Czech Republic

Some organic ethers are miscible with perfluorocarbons.



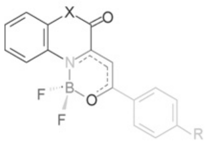
J. Fluorine Chem., 129 (2008) 402

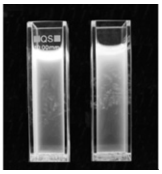
Synthesis, structure and spectral study of two types of novel fluorescent BF$_2$ complexes with heterocyclic 1,3-enaminoketone ligands

Min Xia[a,b], Bin Wu[a], Guofeng Xiang[a]

[a] *Department of Chemistry, Zhejiang Sci-Tech University, Hangzhou 310018, PR China*
[b] *Key Laboratory of Advanced Textile Materials and Manufacturing Technology(Ministry of Education), Zhejiang Sci-Tech University, Hangzhou 310018, PR China*

Two novel types of complexes with remarkable fluorescence can be readily prepared by reaction of BF$_3$OEt with 3-(2-oxo-2-arylethylidene)-3,4-dihydro-1*H*-quinoxalin-2-ones or 3-(2-oxo-2-arylethylidene)-3,4-dihydro-benzo[1,4]oxazin-2-ones in refluxing acetic acid/toluene.



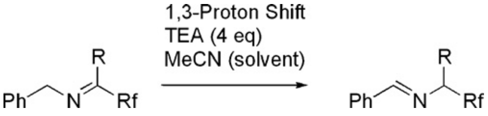


J. Fluorine Chem., 129 (2008) 409

Kinetics and mechanism of triethylamine-catalyzed 1,3-proton shift. Optimized and substantially improved reaction conditions for biomimetic reductive amination of fluorine-containing carbonyl compounds

Péter Nagy, Hisanori Ueki, Dmitrii O. Berbasov, Vadim A. Soloshonok

Department of Chemistry and Biochemistry, University of Oklahoma, Norman, OK 73019, United States



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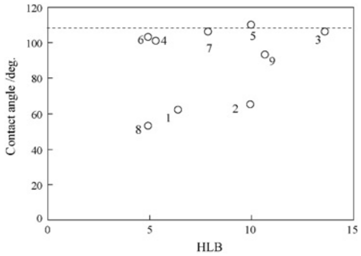
Electroless Ni-plating on PTFE fine particles

Hirotaka Kinoshita[a,b], Susumu Yonezawa[a], Jae-ho Kim[a], Masayuki Kawai[c], Masayuki Takashima[a,c], Toshihide Tsukatani[b]

[a] *Department of Materials Science and Engineering, Faculty of Engineering, University of Fukui, 3-9-1 Bunkyo, Fukui 910-8507, Japan*
[b] *Nicca Chemical Co., Ltd., 4-23-1 Bunkyo, Fukui 910-8670, Japan*
[c] *Cooperative Research Center, University of Fukui, 3-9-1 Bunkyo, Fukui 910-8507, Japan*



Relationship between the contact angle of a water droplet on surfactant-treated PTFE and HLB of the surfactant: 1, BL-2; 2, BL-4.2; 3, BL-9EX; 4, BC-2; 5, BC-5.5; 6, BS-2; 7, BS-4; 8, BO-2V; 9, BO-7V. The dashed line at 109° shows to the blank (without surfactant) sample.

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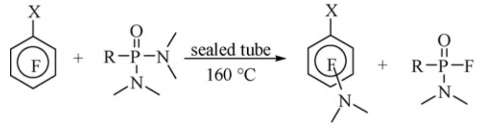
Reactions of HMPA with hexafluorobenzene, pentafluorochlorobenzene and pentafluorophenol

Cheng-Pan Zhang, Qing-Yun Chen, Ji-Chang Xiao

Key Laboratory of Organofluorine Chemistry, Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, 354 Fenglin Road, Shanghai 200032, China

Hexamethylphophoramide (HMPA) reacted with hexafluorobenzene and its derivatives with good conversion to give dimethylaminated products and phosphorofluoridates, even in unfavorable reaction stoichiometries. An aromatic nucleophilic mechanism might be involved.



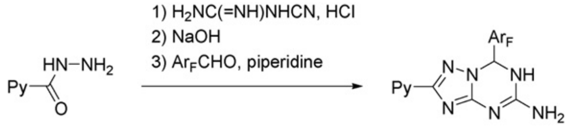
X=F, NMe$_2$, Cl, OH
R=F, NMe$_2$

J. Fluorine Chem., 129 (2008) 429

Synthesis and biological activity of fluorinated 7-aryl-2-pyridyl-6,7-dihydro[1,2,4]triazolo[1,5-*a*][1,3,5]triazin-5-amines [1]

Anton V. Dolzhenko[a], Bee Jen Tan[a], Anna V. Dolzhenko[a,b], Gigi Ngar Chee Chiu[a], Wai Keung Chui[a]

[a]*Department of Pharmacy, Faculty of Science, National University of Singapore, 18 Science Drive 4, Singapore 117543, Singapore*
[b]*Perm State Pharmaceutical Academy, 48 Lenin Street, Perm 614990, Russian Federation*



A simple procedure for the synthesis of fluorinated 7-aryl-2-pyridyl-6,7-dihydro[1,2,4]triazolo[1,5-*a*][1,3,5]triazin-5-amines was developed and their structure and anticancer properties were investigated.

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Coupling routes to hexafluoro-1,3-butadiene, substituted-1,3-fluorine-containing butadienes and fluorinated polyenes

Donald J. Burton, Steven W. Hansen, Peter A. Morken, Kathryn J. MacNeil, Charles R. Davis, Ling Xue

Department of Chemistry, University of Iowa, Iowa City, IA 52242, USA

Cu(0) coupling of fluorinated vinyl iodides, Pd(0) coupling of $F_2C{=}CFZnX$ with fluorinated vinyl iodides, $CuBr_2$ and $FeCl_3$ coupling of perfluorovinylzinc reagents, oxidation of perfluorovinylcopper reagents with O_2, provide routes to hexafluoro-1,3-butadiene, substituted-1,3-fluorine-containing butadienes and fluorinated polyenes.

$$F_2C{=}CXZnY \xrightarrow[\text{FeCl}_3 \text{ or } \text{O}_2]{\text{CuBr}_2 \text{ or}} F_2C{=}CXCX{=}CF_2$$

X = F, CF_3 62-97%

$$RCF{=}CFI \xrightarrow[\text{DMSO, RT-110°C}]{\text{Cu(0)}} RCF{=}CFCF{=}CFR$$

R = p-MeC_6H_4
= ( )-$CF_3CF{=}CF$
69-98%

$$[F_2C{=}CFCu] \xrightarrow{F_2C{=}CFI} F_2C{=}CFCF{=}CF_2$$

63%

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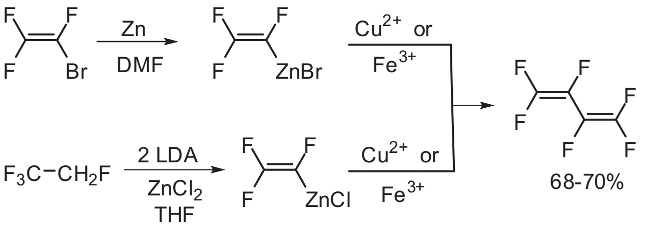
Preparative-scale one-pot syntheses of hexafluoro-1,3-butadiene

P. Veeraraghavan Ramachandran, G. Venkat Reddy

Department of Chemistry, Purdue University, 560 Oval Drive, West Lafayette, IN 47907-2084, United States



J. Fluorine Chem., 129 (2008) 447

Synthetic utility of 4-bromo-2,3,5,6-tetrafluoropyridine

John A. Christopher[a], Laura Brophy[a], Sean M. Lynn[a], David D. Miller[a], Lisa A. Sloan[a], Graham Sandford[b]

[a] *GlaxoSmithKline R&D, Medicines Research Centre, Gunnels Wood Road, Stevenage, Hertfordshire SG1 2NY, UK*

[b] *Department of Chemistry, University of Durham, South Road, Durham DH1 3LE, UK*

The regiochemistry of sequential nucleophilic substitution and palladium catalysed Suzuki–Miyaura reactions of 4-bromo-2,3,5,6-tetrafluoropyridine has been investigated.